ARIZONA TRANSPORTATION INFORMATION SYSTEM

ATIS NEWS

Volume 2, Issue 3
Winter 1998

ESRI GRANTS $2.4 MILLION!

This article by Chris Harlow was reprinted with permission from The Harlow Report.

Sometimes good business and altruism can be partners. Take, for example the recent announcement by ESRI that they established a fund for local governments that are interested in GIS. The money will be provided for software and training grants.

Called The ESRI Local Government Start-up Grant Program, it was established to assist local governments in establishing organization-wide GIS projects. The program provides software for the establishment of parcel, street right-of-way, and street centerline information, and establish data sharing. ESRI will provide software and training to 100 government agencies.

Here's what you can get:

- One copy of Arc/Info for Windows NT
- One copy of ArcView GIS
- One copy of MapObjects IMS
- MapObjects Internet Starter Application
- General Map Utility
- Property Information Utility
- Event Notification Utility
- Site Selection Utility
- Demographic Utility
- ArcExplorer
- Links to ArcData Online Program
- One Introduction to ArcView GIS via ESRI's Virtual Campus

Here's how you get it

To be eligible for the ESRI Local Government Start-Up Grant Program, you must be one of four government organizations:

1. Councils of Governments (COGs)

(Continued on page 2)

GITA ESTABLISHES GIS STANDARD

The Arizona Government Information Technology Agency (GITA) has established a statewide standard on GIS software for State agencies. The Geographic Information System Standard, B701-S001, became effective September 1, 1998. The adopted standard applies to GIS development software, desktop query and mapping software, and GIS bundled desktop applications to be used or acquired by State Agencies. The approved standards call for ESRI's Arc/Info software for GIS database maintenance applications.

This official standard is no different than the "de facto" standard that has been in place among State Agencies for quite some time. However, now that there is an official standard, State Agencies that acquire a GIS will come in to the technology in an environment that is compatible with those Agencies that already have established GIS environments.

Integration, cooperation and data sharing are a very big part of the GIS community. This standard helps to ensure the compatibility and cooperative development of GIS applications and data across Arizona State Agencies.

To find out more, or to read the entire GIS Standard document, visit GITA's website at www.gita.state.az.us

Inside this issue:

Transportation Working Group	3
Real World GIS	3
Current ATIS Roads	4
ArcView Extension	6
Map Projections	6
Worthy Websites	7
ArcView/HPMS Training	7

Upcoming Events

- GIS User Group meeting January 20, 1999 in Phoenix, Arizona
- GIS '99/Geosolutions March 1-4, 1999 in Vancouver, BC
- GIS-T 99 March 29-31, 1999 in San Diego, California
- 19th Annual ESRI User Conference July 26-30, 1999 in San Diego, California
- URISA Annual Conference August 21-25, 1999 in Chicago, Illinois
- North American Cartographic Information Society (NACIS) 19th Annual Conference October 20-23, 1999 in Williamsburg, Virginia

(see page 4 for details)

ESRI GRANTS $2.4 MILLION! *(continued)*

(Continued from page 1)

2. Metropolitan Planning Organizations (MPOs)
3. County Governments
4. City Governments

According to ESRI, priority is given to organizations that do one or more of the following:

- Organizations demonstrating collaborative efforts with multiple departments
- Projects that promote public access to GIS databases
- Projects that communicate innovative government through the use of GIS.

No free lunches

Okay, so it is a grant program. Still, the folks at ESRI expect something in return. So, to be eligible, you must agree to develop what ESRI terms "GIS framework databases." These are:

- Parcel/Cadastral base
- Street right-of-way base
- Street centerline base

Also, grant recipients must agree to make available a minimum of one copy of the three designated framework databases to all government agencies for no more that the cost of reproduction media. Grant recipients must provide ESRI with a performance report on the status of the grant-funded project 12 months after the award.

The fine print

✓ The grant program is limited to one grant per eligible government organization. *Grants are intended to be awarded to organizations that do not currently use ESRI software.*

✓ Award Period: August 1, 1998 to February 28, 1999

✓ Date of Notification: Grant awards will be announced in three phases. Applications received during the program will remain eligible throughout the entire award period.

✓ Notification of grant awards will be made on the following dates:

- Phase I – October 1, 1998
- Phase II – December 1, 1998
- Phase III – February 28, 1999

Procedure for Applying

Applications must be received no later than 5:00 p.m., February 1, 1999. Each applicant must provide a typewritten response to each of the following in the format requested. Items D-I must be submitted on a maximum of three pages, double-spaced.

A. Letter of support signed by agency head (one page maximum).

B. Provide organizational profile with the following details (one page maximum, double-spaced):

1. Organization name
2. Organization mailing address
3. Population
4. Estimated number of parcels
5. Organization contact
6. Contact phone, fax, and email

C. Provide a response to the statement, "Why my local government organization should be considered for the Local Government Start-up Grant" (two pages maximum, double-spaced).

D. Description of the use of GIS/CAD software currently used by your organization.

E. Description of key personnel

1. Proposed management structure of the GIS program
2. Proposed GIS management personnel (specify title or staff member)
3. Proposed GIS technical/ professional staff (specify title or staff member)

F. Description of plans to distribute GIS data and applications throughout your organization.

1. Describe managing department
2. Describe how multiple department participation will be encouraged

G. Description of hardware to be used

1. Information on computer(s) to be used
2. Information on printer/plotting equipment

H. Description of proposed applications or use of GIS databases

I. Description of perceived benefits/ROI

Submitting your application

Applications must be received no later than 5:00 p.m., February 1, 1999. Mail applications to:

Christopher Thomas
State and Local Govt Solutions Manager
ESRI Local Govt Start-up Grant Program
380 New York Street
Redlands, CA 92373-8100
(909) 793-2853

Conclusion

This is a great idea. If you are not qualified, but know a community that is, why not help them complete the application? The more users of GIS technology, the more we all benefit.

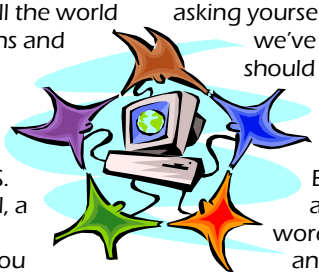
Chris Harlow is the editor of The Harlow Report, a GIS newsletter published by the Advanced Management Group, Inc. Visit their website at http://www.geoint.com to register for a three month no-cost trial subscription.

Ambrose Bierce (1842-1914), "The Devil's Dictionary", 1911:

BOUNDARY, n. *In political geography, an imaginary line between two nations, separating the imaginary rights of one from the imaginary rights of the other.*

REAL WORLD GIS

Here's your chance to tell the world about your GIS triumphs and tribulations! The REAL WORLD GIS column is the place for you to tell *your* story! We welcome articles from anyone involved in GIS. It doesn't have to be a novel, a few paragraphs will suffice. But, be sure to tell us how you use GIS in your job. How has GIS enhanced your ability to do your job? What type of output to you produce? Have you developed any custom GIS applications? These are the things that you can share with our readers.



"What do I get out of it?" You may be asking yourself this question. Well, we've decided that no deed should go unnoticed. So, if we print your story in the next issue of ATIS News, you will receive an official ESRI T-shirt! It's as simple as that. So, fire up that word-processing software and start writing your GIS story today!

You can send your article via email to Jami Garrison at Jgarrison@dot.state.az.us (Word, WordPerfect, or text files are fine). If you still have questions call Jami at (602) 712-8958.

TRANSPORTATION WORKING GROUP

The recent increased interest and need for an accurate statewide transportation base map has prompted the Arizona Geographic Information Council (AGIC) to form a Transportation Working Group. As part of the AGIC Data Resources subcommittee, the general goals of the Working Group are:

- To develop recommendations for transportation standards
- To develop recommendations on how transportation data bases should be created and maintained from an organization perspective
- To develop recommendations on the resources necessary for the creation of transportation standards and databases

The group, headed by Victor Gass of the Arizona Department of Environmental Quality, has met several times to brainstorm ideas on how to proceed with the creation of the statewide transportation database. As it exists right now there is no coordination of effort in transportation framework data development. Thus, no comprehensive data set exists. Of those datasets that do exist in both the public and private sector, they fall short of users' needs in many areas, including accuracy, detail, attribute data, annotation, timeliness, availability, matching of adjacent data sets and cost.

The current and future needs of users are for a detailed, statewide, current transportation framework dataset that is continuously maintained for up-to-date accuracy. The solution, as simple as it may sound, is to coordinate efforts and create a statewide transportation frameworked dataset that meets the needs of users. The hard part is arriving at that solution.

ADOT is currently in the very early stages of updating the ATIS Roads base map coverage. (ATIS Roads is ADOT's statewide transportation base coverage or map — *see map on page 5*). The basic needs for ADOT do not necessarily cover the basic needs of users outside of ADOT. This is where the Transportation Working Group comes in. By coordinating efforts, ADOT and the AGIC Transportation Working Group can build a transportation base coverage that will meet the needs of all users.

To find out more about the AGIC Transportation Working Group, visit the AGIC website at http://www.land.state.az.us/agic/agichome.html or call AGIC at (602) 542-4061.

ATTENTION ESRI SOFTWARE USERS!

If you are not already subscribed to *ArcUser* magazine, why not? Published quarterly by ESRI, *ArcUser* magazine is *the* magazine for ESRI software users. Inside each issue you'll find great feature articles as well as informative articles for every level of ArcView user. To get your FREE subscription do one of the following:

⇒Visit the *ArcUser* website at http://www.esri.com/arcuser/

⇒Email your name, organization, mailing address, phone number and email address to arcuser_circulation@esri.com.

⇒Call (909) 793-2853, ext. 1-1422

⇒Mail your address information to:
ArcUser Magazine Subscriptions
Department 1600
380 New York Street
Redlands, CA 92373-8100

ATIS NEWS

ATIS News is published by the Arizona Department of Transportation (ADOT), Transportation Planning Group to support and promote the use of GIS in ADOT. Our Staff members are:

Tony Gonzales, GIS Project Leader
Phone: (602) 255-7818
email: tgonzales@dot.state.az.us

Jami Garrison, Senior GIS Analyst and Editor of ATIS News
Phone: (602) 255-8958
email: jgarrison@dot.state.az.us

If you are not currently on our mailing list and would like to be, contact Jami Garrison at the contact information listed below. Comments, questions or articles may also be submitted. Deadline for submissions to the Spring 1999 issue is March 5, 1999.

ATIS Newsletter
Arizona Dept of Transportation
206 South 17th Ave #330B
Phoenix, AZ 85007
(602) 255-8958
jgarrison@dot.state.az.us

CURRENT ATIS ROADS STATEWIDE COVERAGE

As detailed in the last issue of *ATIS News,* the current statewide transportation database maintained by ADOT is called ATIS Roads. This base map, or GIS coverage, is currently under evaluation and in the early stages of updating. As you can see from the map on page 5, the current road coverage is missing many new and realigned roads and streets. ADOT is working on contracting with a private company to assist in the update of ATIS Roads. In addition, the Arizona Geographic Information Council (AGIC) has formed a Transportation Working Group to assist in this updating process (see article on page 3). Through these efforts it is anticipated that a statewide transportation database will be created to support the needs of *all* government users.

One of the primary goals of both ADOT and the AGIC Transportation Working Group is to get the assistance of all Arizona governments in updating and maintaining the ATIS Roads base map. This would include the Indian Tribes, counties, cities and perhaps even some assistance from federal agencies such as the USGS, BLM, Forestry Service and others. With a statewide project such as this cooperation among agencies is a necessity.

Several different options are being explored on how to best build the foundation for cooperation on among so many varied organizations. However, ADOT is confident that such a large task can be accomplished with the support of ADOT management and the many GIS users of the ADOT statewide transportation database or ATIS Roads.

For more information on the ATIS Roads update project, contact Tony Gonzales at (602) 255-7818 or Tgonzales@dot.stae.az.us.

UPCOMING CONFERENCES AND EVENTS

Give yourself an edge by attending a GIS conference. Conferences are a great way to network with other GIS users, catch up on the latest technology advances and expand your knowledge of GIS.

GIS User Group Meeting

The GIS User Group held it's first meeting on October 27, 1998. There were 17 people in attendance. Several attendees were from ADOT, and others came from the Town of Queen Creek, the City of Phoenix and there was even a representative from the Department of Economic Security (DES). Everyone shared information about how they use GIS in their daily work. It was great to get to meet everyone! Make your plans now to attend the next User Group meeting on January 20, 1999 at 1:30 p.m. at the ADOT Traffic Operations Center, 2302 West Durango St, Phoenix. Andy Murray of the Traffic Operations Center will give us a demo on how GIS is used in his office. Everyone is invited to attend. If you haven't seen the Traffic Operations Center (TOC) before, this is a great opportunity to see the high-tech traffic management system at TOC and, at the same time, get together with other GIS users to share ideas. For additional information call Jami Garrison at (602) 255-8958 or email JGarrison@dot.state.az.us.

GIS '99

GIS'99 will be held March 1-4, 1999 in beautiful Vancouver, British Columbia. The upcoming event will not follow the traditional 'mega-conference' format. They have created a more interactive, solution oriented program with vertically integrated 'mini-conferences' centered around Canada's largest GIS Trade Show. Major themes of the conference will be Precision GPS, Forestry and Natural Resources, Business Geographics, Internet GIS, Data and more. For more information visit their website at http://www.gis99.com or contact Claudia Sitar at (203)445-9265 or email csitar@aip.com.

GIS-T '99

The Geographic Information Systems for Transportation Symposium will be held March 28-31, 1999 in San Diego, California. The purpose of GIS-T is to provide a forum for transportation officials from State, Province, Federal, and Municipal Agencies to discuss GIS and transportation issues. For additonal information visit the GIS-T '99 website at http://gis.dot.state.mn.us or contact Diane Pierzinski at (916) 654-3379 or email diane.pierzinski@dot.ca.gov.

ESRI 19th Annual User Conference

Always a must! If you only attend one GIS conference this year, make it the ESRI Annual event! Scheduled for July 26-30, 1999 in San Diego, California. Get more information from the ESRI website at http://www.esri.com

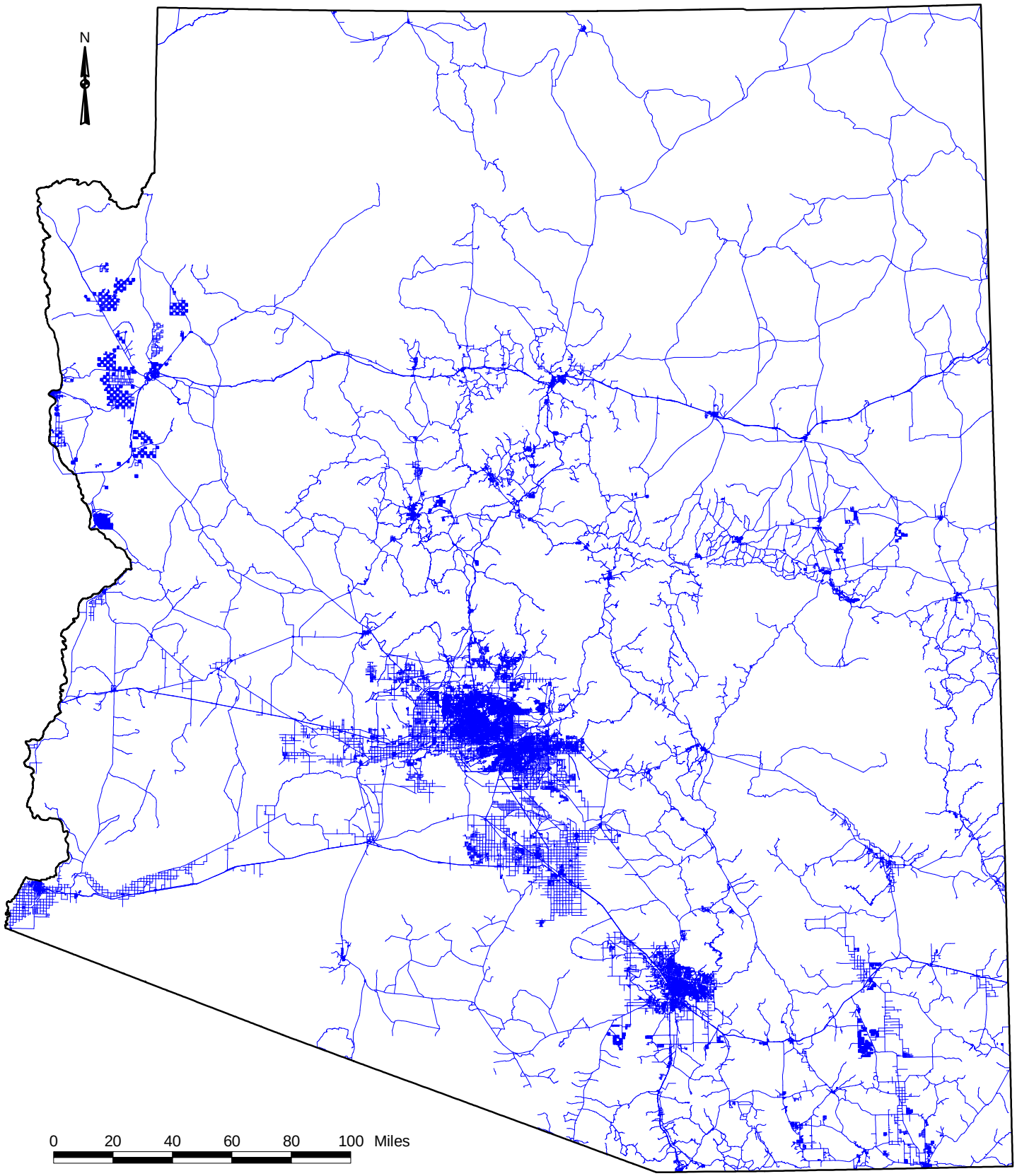
URISA Annual Conference

The 1999 Urban and Regional Information Systems Association (URISA) conference will be held August 21-25 1999 in Chicago, Illinois. URISA's Annual Conference and Technical Exposition is a high level management/policy discussion of IT/GIS issues affecting urban and regional governments. This event features hundreds of IT/GIS presentations, vendor demonstrations, URISA workshops, Chapter meetings, Committee meetings, and a technical vendor exposition. Additional information can be found on their website at http://www.urisa.org.

NACIS Annual Conference

The North American Cartographic Information Society (NACIS) is hosting its 19th annual conference October 20-23, 1999 in Williamsburg, Virginia. Watch their website at http://www.nacis.org for details.

Current ATIS Roads Satewide Coverage



ARCVIEW EXTENSION: *PROJECTOR!*

How many times have you received a shapefile and tried to load it into your View only to find out that the shapefile you just got doesn't line up with the ones you already have? Most likely this is because the shapefile is not in the same map projection as your files. This is a very common problem when exchanging data with other users. The answer? Reproject the shapefile in ArcView using the *Projector!* extension.

Regardless of whether or not you have upgraded to ArcView 3.1 the *Projector!* extension is one you can use with either version of ArcView. This extension comes with ArcView as a sample and can be located in the c:\esri\Av-gis30\ArcView\samples\ext directory (assuming you installed ArcView on a Windows OS using the default directories). If you cannot locate the file in your samples directory, it is available from ESRI's website at http://www.esri.com. The filename for this extension is *prjctr.avx*. You will need to copy this file into your ArcView extensions directory in order to use it. Copy it to the c:\esri\Av_gis30\ArcView\ext32 directory (or wherever your ArcView extension files are located on your machine).

If you are not familiar with using extensions, once you have copied the *prjctr.avx* extension into your *ext32* directory, simply start an ArcView session and load the extension from the File/Extensions menu. (Select "Projector!" from the window that lists available extensions).

Now, before you can begin to reproject your shapefile, you first need to know what projection the shapefile is in to begin with. If the shapefile is *not* projected (meaning it is in lat/long or decimal degrees) then this is not necessary. Otherwise be certain to get the projection information, including the datum (NAD 83 or NAD 27), from the person who gave you the file.

If you have successfully loaded the extension then in your View GUI you should see an icon like this:
Add the shapefile you want to reproject into a blank view. Set your map units and distance units in the View Properties. Now, with the shapefile that you want to reproject active, click the *Projector!* button. You will be prompted by a series of menus. First enter the current projection of the shapefile (the input information). Next you'll be prompted to enter the output projection information and whether or not to add the newly projected file into a view. Lastly, you give the new shapefile a name and then ArcView creates a new shapefile in the new projection.

This is a very simple process since it is entirely menu driven. The *Projector!* extension works on both ArcView shapefiles and ArcInfo coverages. However, note that when using this extension to reproject an ArcInfo coverage, the projected file will be an ArcView shapefile, not an ArcInfo coverage.

Remember, before you go trying to write a script or an ArcView extension yourself, check out what others have created first. You probably will find what you are looking for and save yourself a lot of work. Here are places to check for ArcView scripts and extensions:

⇒ Look in the samples directory that came with your installed ArcView Software.

⇒ On the internet, visit the ESRI user script area at:

http://andes.esri.com/arcscripts/scripts.cfm

(or located it under ArcScripts off the esri.com main web page)

⇒ On the internet, visit Gary Greenberg's Avenue Programmers Reference page for an indexed library of scripts. This is an excellent resource that is fully searchable by keyword. Find it online at:

http://www.gator.net/~garyg/aveclass.htm

MAP PROJECTIONS

Map projections allow areas on the surface of the Earth (a spheroid) to be represented on a map (a flat surface). In this way the precise position of features on the Earth's surface can be obtained from the map. All map projections distort shape, area, distance and direction to some extent. The impact of this distortion on your work depends on what you will be using your map for, and its scale:

- ✓ In most business applications, the characteristics of the map projection being used will probably not be of critical importance. Business applications, for example, are typically concerned with the relative location of different features, such as sources of supply, demand, and competition, rather than their absolute location on the earth.
- ✓ On large scale maps, such as street maps, the distortion caused by the map projection being used may be negligible because your map will typically cover only a small part of the Earth's surface.
- ✓ On smaller scale maps, such as regional and world maps, where a small distance on the map may represent a considerable distance on the Earth, this distortion may have a bigger impact, especially if your application involves comparison of the shape, area or distance of different features. In these cases, knowledge of the characteristics of the map projection you are using becomes more important.

FYI: ADOT uses a projection called *State Plane, Arizona Central, NAD 83, in meters*. This projection is based on the Transverse Mercator projection.

WORTHY WEBSITES

ADOT TRANSPORTATION PLANNING GROUP

http://map.azfms.com

At long last the Transportation Planning Group (TPG) has a website! The site is still undergoing some additions, but already there are plenty of things to see!

The 1998 Status and Condition of the Arizona Highway System report is available for viewing online or downloading in Adobe Reader PDF format. All the maps included in this report are also available either via online interactive maps, downloadable Adobe PDF files, or as viewable graphic images.

Point your browser to the *GIS & ATIS* information section of the website and there you will find links to this newsletter (and past issues), general information about GIS in ADOT, a section dedicated to the GIS User Group, and, most importantly, our online maps!

Powered by ArcView Internet Map Server (IMS), you can view many of the popular ADOT maps right online! Some of the maps available for view and query are: Highway Functional Classification, Average Daily Traffic Volume on the State System, State Milepost Map, Suitable Bicycle Routes, and Road Conditions (just to name a few). You will need a java-enabled internet browser to view the interactive maps.

U.S. GEOLOGICAL SURVEY

http://www.usgs.gov

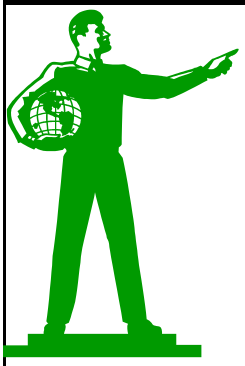
The U.S. Geological Survey provides the Nation with reliable, impartial information to describe and understand the Earth. This information is used to: minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; enhance and protect the quality of life; and contribute to wise economic and physical development. The mapping section of the USGS website is loaded with National mapping information like the Geographic Names Information System (GNIS), downloadable geodata, educational resources, mapping news and more.

DAVE'S SOFTWARE LIBRARY

http://rmmcweb.cr.usgs.gov/~dcatts/software/

Dave Catts offers an excellent selection of scripts and macros developed by USGS researchers for processing geographic data and information.

HPMS TOOLS AND ARCVIEW TRAINING



HPMS Tools and ArcView training was conducted for local government employees who are involved (or will be involved) in submitting HPMS data to ADOT. ADOT staff traveled to Tucson, Yuma, Kingman, Show Low and Superior to conduct the 2-day class. Training for the NACOG area in Flagstaff and the SEAGO area in Willcox is tentatively scheduled for some time in January 1999.

The 2-day session consists of one day for ArcView training and the other day for HPMS tools training. The ArcView training is *not* the certified ESRI course, but an abbreviated course designed to compliment the HPMS tools training. Please call Mark Catchpole at (602) 255-8596 for more information on this training course.

ADOT will provide ESRI certified training four times next year at no or little cost for ADOT employees.

Local government employees are also eligible to attend these classes through the Local Technical Assistance Program (LTAP) at a reduced rate. Call Stephanie DeLeon of LTAP at (602) 255-8461 for information on how to sign up for the Certified ArcView course.

Sorry, but we cannot allow any consultants or other private industry employees to enroll in the class. For non-government employees, the same certified class is available through private entities for around $350. A list of certified instructors can be found on ESRI's web site at http://www.esri.com.

Certified ArcView Classes
January 13-14
April 14-15
June 9-10
October 20-21

ARIZONA TRANSPORTATION INFORMATION SYSTEM

Arizona Department of Transportation
Transportation Planning Group
206 South 17th Avenue, #330B
Phoenix, Arizona 85007-3213

Phone: 602-255-8958
Fax: 602-256-7263
Email: jgarrison@dot.state.az.us

You're Invited! The Next GIS User Group Meeting will be held on Wednesday, January 20, 1999. Mark your calendar now! The meeting will be held in Phoenix from 1:30 p.m. to 3:30 p.m. at ADOT's Traffic Operations Center, 2302 West Durango St, Phoenix. For more information contact Jami Garrison at (602) 255-8958 or email JGarrison@dot.state.az.us.